

***SENATE OF PAKISTAN  
HOUSE OF THE FEDERATION***

**Report**



***Report of the Senate Special Committee on Water Scarcity on a Notice given by Senator Sherry Rehman under Rule-218 regarding need for installation of water desalination plants in the country.***

***PRESENTED BY***

***SENATOR MOULA BUX CHANDIO  
CONVENER***

## SENATE SECRETARIAT

### REPORT OF THE STANDING SPECIAL COMMITTEE ON WATER SCARCITY

I, Convener of the Standing Special on Water Scarcity, have the honour to present the report on a Notice given by Senator Sherry Rehman under Rule-218 on 30<sup>th</sup> July, 21018 regarding "Installation of desalination plants in the country" referred to the Special Committee on Water Scarcity for consideration and report thereof.

2. The composition of the Special Committee on Water Scarcity is as under:-

1. Senator Moula Bux Chandio	Convener
2. Senator Sassui Palijo	Member
3. Senator Ch. Tanvir Khan	Member
4. Senator Dr. Ghous Muhammad Khan Niazi	Member
5. Senator Syed Muzafar Hussain Shah	Member
6. Senator Syed Muhammad Sabir Shah	Member
7. Senator Brig ( R) John Kenneth Williams	Member
8. Senator Muhammad Akram	Member
9. Senator Sardar Muhammad Shafiq Tareen	Member
10. Senator Anwar-ul-Haq Kakar	Member
11. Senator Khushbakht Shujat	Member
12. Senator Moulana Abdul Ghafoor Haideri	Member

3. The matter was taken up in the meetings of the Special Committee on 06.09.2018, 17.10.2018 and 21<sup>st</sup> February, 2019.

4. The Committee finalized its recommendations in the meeting held on 21<sup>st</sup> February, 2019 and allowed to submit the report to the House. The following members of the Committee attended the meeting.

1. Senator Moula Bux Chandio

Convener

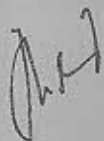
2. Senator Sassui Palijo
3. Senator Dr. Ghous Muhammad Khan Niazi
4. Senator Brig ( R ) John Kenneth Williams
5. Senator Khushbakht Shujat
6. Senator Lt. General ( R ) Abdul Qayyum

Member  
Member  
Member  
Member  
Mover

### SUMMARY

Millions of people all over the world do not have an access to water and if it is accessed even, the water is unable to be used. Though 70% of the Earth's surface is covered with water yet 3% of it is fresh water i.e. suitable to human consumption. About two thirds of this is tucked in frozen glaciers and so unavailable for human usage. According to WWF about 1.1 billion people of the world lack access to water while about 2.7 billion find water scarcely for at least one month of the year. Clean water is scarce and there are millions of people across the globe who spend the whole day searching for it. People who have access to safe clean drinking water take it for granted and do not use it wisely. Water scarcity encompasses water crisis, water shortage, water deficit or water stress. Water scarcity can be due to physical water scarcity and economic water scarcity: Physical water scarcity means a situation where natural water resources are insufficient to fulfill the demands of a region and economic water scarcity is a result of poor water management resources. In our case we are facing the both.

The water reservoirs in Pakistan namely Tarbela, Mangla and Chashma are insufficient to the growing needs of the country. Their capacity has considerably decreased up to 27% due to sedimentation. In addition to storage reservoirs, Pakistan has one of the largest irrigation systems that consists of 99 barrages for diverting water to the canals, 12 link canals for carrying water from western rivers to eastern rivers, 46 canals to carry water from barrages to



farms and about 100,000 small irrigation channels to take water from canals to fields. Still there is dire need to construct new dams and reservoirs for future needs.

Infrastructure is not confined to water dams only rather it includes the infrastructure used to pump, transport, divert, store, treat, and deliver safe drinking water as well as tools and equipments used to build them. These structures include ground water wells, dams, store tanks, pipes, drinking water facilities and aqueducts. Naturally with poor water infrastructure, water scarcity becomes inevitable. In our background Karachi and Gwadar and other parts of the country are facing the same because we as a nation have not focused on the above mentioned factors.

Infrastructure also covers natural infrastructure that makes use of land scape management techniques, search for conservation, restoration and sustainable management. These techniques provide basic water services such as flood control, Aquifer storage and recharge. It helps in providing clean and abundant supply of water. Also, improved infrastructure helps in reducing wastage of clean water.

Desalination is the process of water purification to make salty water pure and clean by separating dissolved salts and other minerals. Desalination can also be used to purify brackish water. This process is used to produce enough water to cope with the needs of coastal population. It is under evolutionary process and under constant research to improve the efficiency.

Recent research and technology have also introduced techniques that made it possible for water regarded unfit for consumption, to be made clean and safe for consumption. The most recent techniques used in the world are as follows:



Reverse Osmosis, Electro-Dialysis Reversal (EDR), Desalinization, Nano-Filtration and Solar UV-Filtration. All such options can also be tried as pilot projects in different localities at a small scale.

The issues and problems of Karachi related with the provision of water and sewerage system also came under discussion in the Committee meetings. Following issues were identified as the main issues with reference to water supply to Karachi city:


- a) Outlived water and sewerage system laid decades back.
- b) Lack of maintenance due to low budgetary provisions for O&M.
- c) Water contamination at tertiary level.
- d) Frequent electricity breakdowns.
- e) Encroachment on sewerage lines causing maintenance problems.
- f) Water crisis in Hub source due to low rains in Hub dam catchment area, 100 MGD supply from Hub Source reduced to ZERO.

It was also discussed that mushroom growth and expansion of Karachi city is over burdening the existing system. Karachi Water Board took measures that managed the system to certain extent but the Committee felt that it requires further improvement.

It also came under discussion that day by day we are leading towards a water stressed country. In 1951, with 30 million population, we had 5,000 cubic meter water per head. Now we have only 1,000 cubic meter water per head.

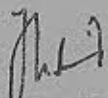
#### RECOMMENDATIONS:

1. Desalination is a very expensive option. But water being acknowledged the basic right cannot be denied to all those who are being deprived of it. Many of the countries and particularly the gulf region have opted for desalination. So, the Committee observed that we cannot ignore this option because of the expense only. The Committee recommended that as a pilot project desalination



plants must be installed in Karachi and Gwadar. If viable, the same can be replicated in other parts of the country.

2. A scientific survey needs to be carried out to locate sweet sub-surface water and the saline water. It will help in extrapolating the future needs and proper usage.
3. Water conservation be made part of curriculum of our educational institutions.

  
(JAVAID IQBAL)  
Secretary Committee

  
(SENATOR MOULA BUX CHANDIO)  
Convener